

# M E R T T

## Incident Commander-Recovery Phase



### INTRODUCTION

This module provides information concerning the actions that must be completed at the scene of an incident involving radioactive material before the incident is moved to the recovery phase. This module also addresses issues that may be of concern during transition from the response phase to the recovery phase, including recovery-planning issues, tactical objectives the Incident Commander (IC) should consider when developing a recovery plan, and the difference between short-term and long-term recovery issues.

### PURPOSE

The purpose of this module is to provide you with the necessary information to successfully transition from the response phase to the recovery phase of a radiological incident.

### MODULE OBJECTIVES

Upon completion of this module, you will be able to:

1. Identify actions that must be completed before transitioning to the recovery phase of an incident involving radioactive material.
2. Identify issues that may be of concern during the transition from response to recovery phase.
3. Identify recovery-planning issues that must be addressed by the IC.
4. Identify tactical objectives the IC should consider when developing a recovery plan.
5. Explain the difference between short-term and long-term recovery activities.

## notes



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#### POST INCIDENT RECOVERY

The recovery phase of an incident involving radioactive material does not differ significantly from the recovery phase of incidents involving other hazardous material. The concerns of persons who are affected (stakeholders) need to be addressed. Affected persons need to be assured that the environment will be restored to pre-incident conditions. The Incident Commander has the responsibility to acknowledge stakeholder concerns and to insure that all concerns are properly addressed during recovery operations. The recovery phase begins when emergency response actions are completed and a formal transition occurs. Recovery continues until the incident scene is restored to pre-incident condition.

#### CONCLUDING THE EMERGENCY PHASE

The recovery phase implementation cannot begin until the emergency or response phase is completed. A recovery plan must be prepared, and several issues must be addressed before entering the recovery phase. These issues include insuring that:

- All rescue and medical actions have been completed
- Fires and potential fire hazards have been extinguished or addressed
- The scene is isolated and secured
- Public protective actions have been completed
- All hazardous material including, but not limited to, radioactive material have been attended to and, if possible, contained
- Contamination control measures have been implemented, limiting contamination to the area inside the hot zone

There may be other issues and concerns that need to be addressed. Some of these will be dictated by local procedures and will vary depending on locally established roles and responsibilities.

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### Personnel Follow-up

Personnel follow-up involves preparing copies of records, exposures, and medical actions for each person involved at the incident scene. Copies of these records may need to be supplied for individual or agency records or both. Follow-up actions may also include bioassay sampling to detect internal contamination.



### Equipment Decontamination or Replacement

Equipment decontamination or replacement involves evaluating and surveying any equipment used at the incident scene to insure complete decontamination or, if necessary, proper disposal and replacement.

### Post Incident Concerns

The IC needs to identify responding agencies involved in the response phase of the incident and relay this information to the state Radiation Authority. The state Radiation Authority will be responsible for completing radiation exposure calculations for those individuals involved in the incident.

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Radioactive material, radiation exposure, and radioactive contamination can all be controlled and handled in ways that minimize hazards and produce few or no biological effects. However, at any incident involving radioactive material there may be psychological and physical effects in the form of post-incident stress or trauma. People tend to fear the unknown, or things that they are not familiar with, and most people are unfamiliar with radioactive material. The IC needs to be aware that, even though there may be little or no potential for biological effects resulting from exposure to radioactive material at an incident, personnel under the IC's command may experience real stress as a result of their involvement at the incident scene. The IC must address the concerns of these individuals and provide accurate information to help them understand the true nature of the hazards at the incident and help alleviate their concerns, fears, and stress. In some instances, properly addressing these concerns may require the assistance of specialized professionals.

#### RECOVERY PLANNING

##### Developing a Recovery Plan

The IC is responsible for preparing a recovery plan. This plan must include information about radiological releases and conditions at the incident scene. In preparing the recovery plan, the IC is responsible for overseeing the following:

- Identify all stakeholders and responsible parties
- Identify incident scene restoration organizations (cleanup contractors or other agencies that have radiological experience and necessary licensing)
- List the type, quantity, form, and extent of any radioactive material release
- Address special concerns relative to location and proximity to sensitive ecological areas or populations
- Identify potential impact to the environment
- Identify waste handling and transportation requirements, including permits, manifests, disposal sites, etc
- Identify sampling procedures, processes, methods, and analysis including identification of analytical labs and protocols

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- Assign roles and responsibilities for regulating the cleanup process and approving release limits
- List criteria for ending the recovery phase (This list should include release limits for personnel and the incident scene before termination of recovery phase can take place)

### IMPLEMENTING THE RECOVERY PLAN

#### Making the Transition from Emergency Response Phase to Recovery Phase

When all issues, including those of local concern have been addressed, the emergency response phase of the incident can end and the recovery phase can begin.

At this point, the following actions will help make the transition effective and efficient:

##### Transfer of command

If the incident command is to be transferred to another individual, the transfer should be made formally and documented. All personnel, on-scene and off, should be made aware of the new Incident Commander's identity.

##### Personnel briefing/debriefing

The remaining staff should be briefed/debriefed, have an opportunity to review the recovery plan, and discuss any remaining issues including remaining hazards. Those involved in the recovery phase should insure that all aspects of the recovery have been documented.

##### Documentation

All information, records, and logs accumulated during the response phase of the incident should be made available to the new IC when command is transferred.

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#### Tactical Objectives

Recovery phase tactical objectives that are specific to radioactive material include:

- Identifying monitoring and dosimetry needs
- Locating, isolating and collecting all spilled radioactive material
- Determining and documenting secondary contamination of soil, water, plants, and/or other objects
- Identifying container size requirements and/or equipment needs for lifting or handling containers
- Implementing procedures for handling, storing, and transporting contaminated waste
- Implementing procedures for complete and proper maintenance of personnel accountability and exposure records





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### TERMINATING THE RECOVERY PHASE

Deciding to terminate the recovery phase of an incident can be a difficult decision. In fact, true termination of the recovery phase may take some time. Criteria for termination of the recovery phase should be identified in the recovery plan. Accomplishing specific items in the recovery plan could involve short-term or long-term activities.

Short-term activities are those that can be accomplished during the immediate, active recovery operation. These activities include decontamination, removal of waste, removal of equipment, and preliminary site restoration.

Long-term activities can include soil, water, and biological monitoring to check for residual material and effects, restoration of landscape, and long-term monitoring of response personnel health. These activities could continue for several years.

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#### How Clean is Clean?

When dealing with radioactive material, emotions can override practical considerations. This is especially true with decontamination. Even when all released radioactive material has been removed from an incident scene, background or naturally occurring radiation will be present. It may be necessary to demonstrate this fact to stakeholders. Keep in mind that many areas have higher levels of background radiation than others do. State and federal environmental protection agencies should be consulted to help determine acceptable levels of background radiation. Acceptable levels of background radiation should be identified during recovery phase planning. All stakeholders should agree on acceptable radiation levels.





# Check Your Understanding



- 1 Before entering the recovery phase, all hazardous materials including \_\_\_\_\_ needs to be attended to and contained.
- 2 At an incident involving radioactive material there may be psychological and physical effects in the form of \_\_\_\_\_ stress.
- 3 When developing a recovery plan, \_\_\_\_\_ concerns must be addressed.
- 4 Tactical objectives that are specific to a radioactive material incident include monitoring and \_\_\_\_\_ needs.
- 5 \_\_\_\_\_ recovery activities are those that could be completed during the immediate recovery operation.

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## ANSWERS

1. radioactive material
2. post-incident
3. stakeholders'
4. dosimetry
5. short-term